



Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

28 November 2003

Re:

Application No. 08/579395

Filing Date: 12/27/1995

Inventor: William H. Swain

Confirmation No: 4200

Examiner: Karlsen, Ernest F.

Art Unit: 2829

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RESPONSE TO THE EXAMINER'S ACTION OF 18 NOVEMBER 2003

Greetings,

This response to the Examiner's Action mailed 18 November 2003 is more or less in the order of the Action.

I agree that my Appeal brief filed 24 April 2003 has issues 6.1.1, 6.1.2, and 6.1.3 which are petitionable. I hereby withdraw these issues as stated below and on page 43 of my brief.

6 Issues Summarized

6.1 The first three issues are related. Argument is given in section 8.1, beginning on page 47.

6.1.1 Whether 3 year old generic method and apparatus claims 63-66, never having been examined on merit, may properly be finally rejected before examination on merit.

6.1.2 Whether claims 32-66, excepting only claim 45, can properly be finally rejected on the basis of discussion of only claim 45 when none have been examined on merit since my 148 page traverse of 6 grounds for rejection on 24 March 2000.

6.1.3 Whether the Examiner erred when he asserted, contrary to the record:

Examiner 1-29-03 By Applicant's admission in Paper No. 28 the fate of claim 45 determines the fate of all
Page 3, Line 3-4 claims so only claim 45 is discussed.

I did not so admit.

I have petitioned the Commissioner for Patents concerning issues 6.1.1, 6.1.2, and 6.1.3. I enclose a copy of my petition dated 28 November 2003. Issues 6.1.1, 6.1.2 and 6.1.3 are withdrawn from my Appeal of 24 April 2003.

Now that the petitionable issues are withdrawn from my brief I request that my appeal to the Board of Patent Appeals go forward as stated in 35U.S.C. 134 and 37CFR1.191.

35U.S.C134

35 U.S.C. 134. Appeal to the Board of Patent Appeals and Interferences.

An applicant for a patent, any of whose claims has been twice rejected, may appeal from the decision of the primary examiner to the Board of Patent Appeals and Interferences, having once paid the fee for such appeal.

MPEP 2105
Page 1200-2

37 CFR 1.191. Appeal to Board of Patent Appeals and Interferences.

(a) Every applicant for a patent or for reissue of a patent, or every owner of a patent under reexamination, any of the claims of which have been twice rejected, or who has been given a final rejection (§ 1.113), may, upon the payment of the fee set forth in § 1.17(e), appeal from the decision of the examiner to the Board of Patent Appeals and Interferences within the time allowed for response.

37CFR1.191

Claims 32-66 were finally rejected on 1-29-03.

Claims 32-66 were rejected on 9-28-02.

Claims 32-62 were rejected on 1-24-00.

I timely paid the fee and filed notice of Appeal on 3-31-03.

I timely paid the fee and filed the Brief on 4-24-03, seven (7) months ago.

The petitionable matter has been withdrawn, so my Appeal should go forward. In 37CFR1.191 I see no reference to a requirement to restrict as basis for withdrawing or delaying my Appeal. Moreover, in 37CFR1.191 I see no reference to withdrawal of Final Rejection as basis for withdrawing or delaying my appeal.

I request that my appeal now go forward; including issues 6.2 and 6.3 as written on page 43 of my brief of 24 April 2003. These are:

6.2 Whether generic apparatus claim 45, fully viewed in the light of the disclosure, has elements not found in any one of cited references Lee, Moser et al, Hubbard, Sweeny, or Swain, Re: 35 U.S.C. 102(b).

Argument is given in section 8.45.

6.3 Whether generic method claim 66, fully viewed in the light of the disclosure, has elements not found in any one of cited references Lee, Moser et al, Hubbard, Sweeny, or Swain, Re: 35 U.S.C. 102(b).

Argument is given in section 8.66.

I think that the points raised in paragraph 3 of page 2 of the action mailed 18 November 2003 are moot because I have argued and the Examiner has accepted that:

"Because Applicant has indicated that no patentably distinct inventions or species are present the restriction requirements of February 21, 1997 and January 6, 1998 are withdrawn..."

This quote is from the Examiner's action of 9-22-98, paragraph 1.

MPEP 808.02 states on page 800-38; emphasis added:

808.02 Related Inventions

Where, as disclosed in the application, the several inventions claimed are related, and such related inventions are not patentably distinct as claimed, restriction under 35 U.S.C. 121 is never proper (MPEP § 806.05).

In this application Restriction is improper because the invention is "...not patentably distinct as claimed,..." It is disclosed in the Application of 1995 that the claims are related. Each claim includes the "basic concept" in one form or another.

The meaning of "basic concept" is put forth in my petition to the Commissioner for Patents dated 28 November 2003. It reads as follows:

The Invention

By the Grace of God I discovered that some sensors for clamp-on direct current ammeters had a 2 to 1 or more change in signal to noise ratio (SNR) when the magnitude of an operating parameter was changed, i.e., modulated. This is the Genus from which two species are derived.

This is illustrated by Figure 5 which shows data measured using 5 inch diameter aperture clip #88. It is on page 58 of my 1995 Application.

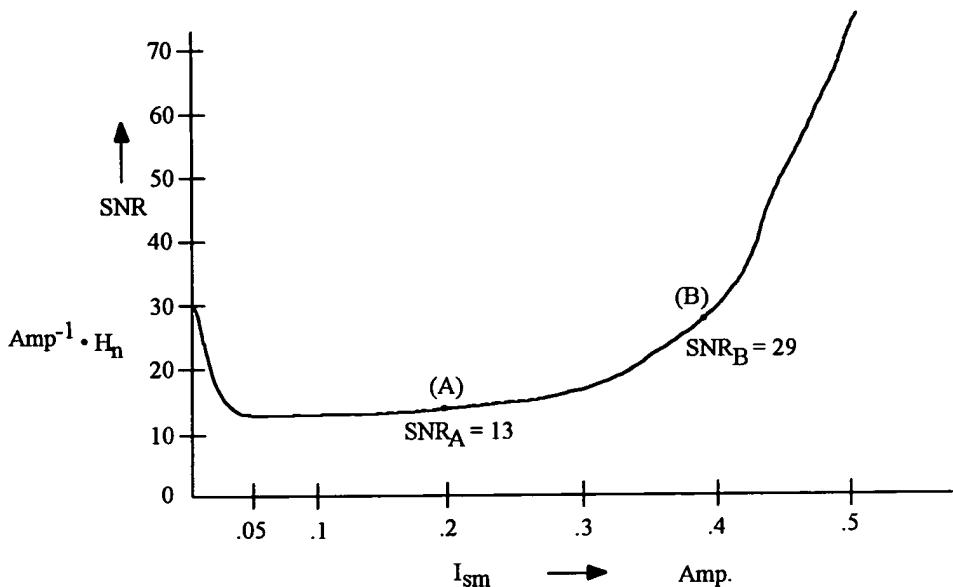


Figure 5
 Signal to Noise Ratio (SNR) for Non-Uniform Field H_n
 vs.
 Operating Parameter I_{sm}
 for
 5" dia. aperture clip #88 in SN 2336

$$\text{SNR} = \frac{\frac{\delta V}{\delta I}}{\frac{\delta V}{\delta N}} \quad \begin{matrix} \text{output} \\ \text{input} \\ \text{noise} \end{matrix}$$

Primary Teaching

The primary teaching of my 1995 Application appears in part on page 11; line 11-15.

DISCOVERY

The inventor discovered that the output V of many Swain Meter clamps was a lot less sensitive (1/2 to 1/3 in some sensors) to a change in the intensity of a non-uniform magnetic field H_n when the magnitude of an operating parameter I_{sm} was doubled or tripled. And the sensitivity (gain) to a change in signal input current I stayed constant to within a few percent.

This Discovery is illustrated on 1995 Figure 4 which shows a normalized measurement of 5" clip #88. Figure 4 is on page 57 of my 1995 Application.

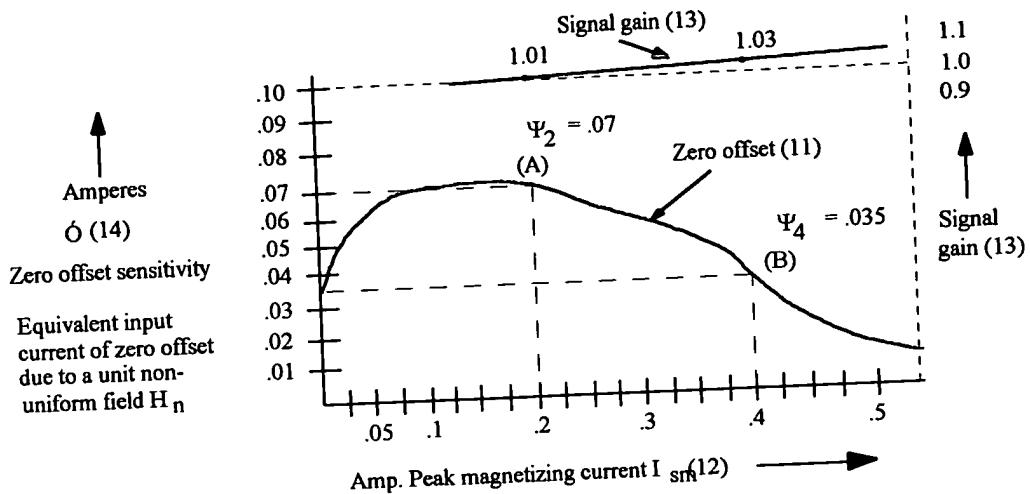


Fig. 4
 Normalized Signal Gain (g) vs. I_{sm}
 and
 Normalized Zero Offset from H_n vs. I_{sm}
 for
 Five inch diameter aperture sensor #88.

This Discovery was applied so as to improve the accuracy in the presence of noise of species "Better SNR" ammeters or provide near cancellation of noise with the species "Combiner". It was found that the sensor (clip) had to have a good "Essential Characteristic". This is stated on 1995 page 11, line 16-22.

Essential Characteristic

Fig. 4 shows the approximate sensitivities for a five inch diameter aperture clip #88. This is an illustration of a sensor having the essential characteristic:

Firstly, the signal gain g (13) sensitivity to signal input I (7) is constant within a few percent as an operating parameter I_{sm} (12) changes from 0.18 A to 0.5 Amp peak; and

Secondly, the zero offset (11) sensitivity to a unit change in intensity of a non-linear magnetic field H_n (8) is reduced to well over half over the same range of I_{sm} (12).

Basic Concept and Requirement to Restrict

The basic concept of this invention includes a sensor based on the above primary teaching plus means to properly control the magnitude of the operating parameter. It is included in generic claims 45 plus 63-66. The basic concept is also in one form or another in each one of claims 32-62. So no one claim is patentably distinct from another. Thus the present requirement to restrict is as improper as the three (3) previous requirements¹ which were withdrawn by the Examiner.

¹ The first three (3) requirements to restrict were in examiner's actions dated 21 February 1997, 28 January 1999, and 31 October 2001.

- Prior statements in support of “the invention is one” are to be found in my Appeal brief of 24 April 2003, pages 7, 15, and 16, and also in my 20 November 2001 response (filed 18 December 2001) to the Examiner’s Action of 31 October 2001, pages 1-8 plus 12-13.

Product and process are discussed on page 7, item 5. That there are no method of use claims is shown on page 7, item 3 and item 6.

Claims 41 and 42 may be expendable. If it will promote progress, I may be willing to cancel claims 41 and 42. For the record, there are no method of use claims. All claims are for apparatus or for method of making. Making can involve an adjustment of values of resistors, etc., which is a part of manufacturing method. The user does not normally make adjustments.

I think it is remarkable that the Examiner finds patentable distinction between the subspecies of figure 9, the subspecies of figure 11, and the subspecies of figure 12. Yet he asserts that my claim 45 lacks patentable distinction from cited reference Sweeny (Action of 9-28-02) after asserting that Sweeny’s work would have the essential characteristic when the Examiner’s magnet is added. Sweeny showed no magnet. Both the Examiner’s assertions and my traverse are in my Brief of 24 April 2003, pages 72-73.

Under protest, with objection to this requirement to restrict, I elect a), b), and c) as follows:

a) On the Examiner’s page 2, invention 1, claims 32-38, 43, 48-54, 59, 64, and 66. Claims 41 and 43 may be expendable. If it will promote progress I may be willing to cancel claims 41 and 43.

b) On the Examiner’s page 4, invention 2. The “Combiner species” as illustrated in figures 9, 11, and 12. “Combiner Species” is included in claims 32-42, plus 45-58, plus 61-66. I hold that claims 45 plus 63-66 are generic and fit for allowance.

The basic concept, which includes the primary teaching (the Discovery and the Essential Characteristic) is contained in one form or another in each and every one of claims 32-66. Therefore, no one claim would be patentably distinct from any other claim. This is especially true of generic claims 45 plus 63-66.

Prior statements in support of “the invention is one” are to be found in my Appeal Brief of 24 April 2003, pages 7, 15, and 16; and also in my 20 November 2001 response (filed 18 December 2001) to the Examiner’s Action of 31 October 2001, pages 1-8 plus 12-13. The “Better SNR” and the “Combiner Species” are discussed on pages 5, 9, and 12.

The second paragraph of page 6 shows the close relationship of these two species, and quotes MPEP 808.01A as follows:

“There must be a patentable difference”. But if I came to the PTO with a “better SNR” species claim (claim 46 for example) I could, at best, get a “Picture” Patent. Likely I would get rejection

as obvious. To make a "better SNR" sensor just take a "combiner" species claim (claim 47 for example) and hold I_{sm} high at 4 in figures 8 and 11. MPEP 808.01(a) is emphatic on this point:

Election of species should not be required if the species claimed are considered clearly unpatentable (obvious) over each other. In making a requirement for restriction in an application claiming plural species, the examiner should group together species considered clearly unpatentable over each other, with the statement that restriction as between those species is not required.

MPEP 808.02 continues:

808.02 Related Inventions

Where, as disclosed in the application, the several inventions claimed are related, and such related inventions are not patentably distinct as claimed, restriction under 35 U.S.C. 121 is never proper (MPEP § 806.05),

"...never proper..." is pretty clear. My invention is one.

Species "Better SNR" and "Combiner" are related because both use at least some part of the basic concept, including the "Essential Characteristic". This is shown above on page 4, figure 5. Therefore, restriction is not proper.

The same logic applies to all three (3) of the Examiner's required elections.

c) On the Examiner's page 6, the subspecies of figure 11.

A claim written to the Examiner's subspecies of figure 11 would be a "picture claim" having so many restrictions that it would be easily bypassed by one skilled in the art. Of claims 32-66, few are this restricted.

It may be that claims 39, 40, 55, and 56 are in the Examiner's subspecies of figure 11.

The basic concept, which includes the primary teaching (the Discovery and the Essential Characteristic) is contained in one form or another in each and every one of claims 32-66. Therefore, no one claim would be patentably distinct from any other claim. This is especially true of generic claims 45 plus 63-66.

Prior statements in support of "the invention is one" are to be found in my Appeal Brief of 24 April 2003, pages 7, 15, and 16; and also in my 20 November 2001 response (filed 18 December 2001) to the Examiner's Action of 31 October 2001, pages 1-8 plus 12-13.

Figures 9 and 11 are 2 ways to build a combiner. They are related in that they both include the sensor with the basic concept and the primary teaching. Figure 12 is a proposed way to build a Hall sensor having the Essential Characteristic, i.e., the primary teaching on page 4 above.

My 1995 Application discloses that they are all related. For example on page 62 the caption of figure 9 is:

Fig 9: A switching implementation of the mathematical relationship shown in Eq. i).

On page 64 the caption of figure 11 is:

Fig. 11: A simpler implementation of the method defined in Eq. i).

Equation i) is a statement of the "General Process" described on 1995 page 20. It is related to the basic process - primary teaching by the last words on the page: "Essential Characteristic". This analysis carries through to page 21 which refers to "Essential Characteristic", "Selective Modulation", "Combining", etc.

Selective Modulation is in the caption for figure 12, showing that it is still another tool for implementing eq i). This appears on 1995 page 65.

Fig. 12: Proposed core structure and magnetic reluctance selective modulation means for a Hall type clamp-on DC ammeter.

A result of analysis is the "more basic equation" for the "Combiner Species", i.e., a "general method" stated in eq i) on 1995 page 22 as follows:

$$\boxed{\text{Eq. i)} \quad V_C = (g_B - \frac{g_A}{\eta})I + (g_B \Psi_B - \frac{g_A \Psi_A}{\eta})N.}$$

This is a more basic equation,
i.e., a general method.

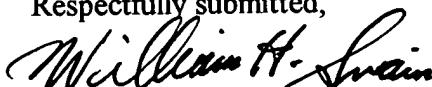
Thus figures 9, 11, and 12 are all related in that they are tools having one form or another of the "Basic Concept" and "Primary Teaching", including the "Essential Characteristic". Therefore they are not patentably distinct, so restriction is not proper.

My 18 December ⁸ response (page 9 and 12) includes a showing that the species "Better SNR" is a special case of "Combiner" eq i). For the "Better SNR" $g_A = 0$, so:

$$V_C = (g_B)I + (g_B \Psi_B)N.$$

This equation is in the middle of page 12.

Respectfully submitted,


William H. Swain
Inventor

11-28-03